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AUTHOR Rogers, Sharon; Luepnitz, Roy
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ABSTRACT

This document traces theoretical developments in the psychology of aging during the last 50 years. The concept of theory is discussed as well as the bringing together of theories to form a model. After summarizing the early beginnings of American interest in aging, the work of major theoreticians is explored including Hall (senescence), Thorndike (learning theory), Miles (testing), Terman (testing), and Cowdry (modern gerontology). The founding of relevant organizations is also described, including the gerontology unit within the National Institute of Health; the Gerontological Society of America; and Division 20 of the American Psychological Association, formerly entitled Maturity and Old Age, and now known as Adult Development and Aging. (AG)

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PSYCHOLOGY OF AGING IN AMERICA: A HISTORICAL ACCOUNT OF THEORETICAL DEVELOPMENTS

Sharon Rogers
Texas A&M University

Roy Luepnitz
Texas A&M University

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PSYCHOLOGY OF AGING IN AMERICA:

A HISTORICAL ACCOUNT OF THEORETICAL DEVELOPMENTS*

Sharon Rogers
Texas A&M University

and

Roy Luepnitz
Texas A&M University

The 1970's were an important decade in the psychology of aging, leading to two major events in 1981: the White House Conference on Aging and the NIMH funded Boulder conference directed at expansion of clinical and counseling geropsychology. These events, plus the funding patterns of government research within the past decade, would suggest that aging has become a national priority. Reasons for this emphasis include a significant growth in the proportion of the population over age 65 and a realization that development does not cease with adulthood.

Instrumental in this changing view of aging in the last 50 years have been a variety of theories regarding the final stages of life. This paper will trace the development of a few of these theoretical statements from their emergence in cultural customs through the founding of APA Division 20. As an example of the development of views within this period, in the mid-nineteenth century aging was believed to be a regression to childhood.

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*Paper presented at the Meeting of the Southwest Psychological Association, April 15, 1982.

Then G. Stanley Hall conducted the questionnaire survey that provided data to dispute this belief and became an important part of his 1922 volume Senescence. Hall was influenced by the biologists of his day, who were studying the physical transformations of aging. Then in 1928, Walter Miles set up the first research unit devoted to studying the psychology of aging at Stanford University. Building on this impetus, Vincent Cowdry, in 1939, compiled comprehensive information and analytical experiments in his work, Problems of Aging. Further developments accelerated the growth of this area and in 1946, Sidney Pressey and others founded APA Division 20 - Old Age and Maturity (now called Adult Development and Aging). This focus on theory development is offered as a demonstration of the changing attitudes on aging within psychology and society at large.

On Theory

Before applying the concept of a theory to the area of aging it is helpful to discuss the meaning and implications of a theory. Within the scientific methodology theory is understood to serve as 1) a way to describe some phenomenon, 2) a method of explaining the object of study, and 3) from description and explanation, an attempt to predict the probability and likely conditions of occurrence for the phenomenon. Theories begin to arise in a field only after a substantial body of descriptive information about a phenomenon is available.

Science involves building theories that generate, disseminate and utilize knowledge; these theories then can be combined in a model. In the process of building a theory, many hypotheses are tested. Some are rejected easily in a single experiment. Others cannot be discounted and they remain to be tested again. This testing represents the most salient difference

between a theory and a model. Despite the frequent rise of both terms interchangeably in psychological literature, there are some clear differences. Model generally refers to a more macroscopic, less testable view that encompasses a larger field of observations or behavior.

By this definition, some of the earlier works on aging reflected model building. This seems to have been a necessary step in capturing the interest of professionals and the public and directing the focus of attention in developmental psychology to the entire life span. For example, the psychoanalytic model of development was based on a biologically predetermined sequence in the maturation of drives, that encompassed all facets of life. However, adult personality was regarded as stable and relatively unchanging. A model statement representing the adult as static offered no hypothesis to be tested except the statement itself and so did not encourage investigation of post-maturity change.

Not many years after the articulation of the psychoanalytic model, Carl Jung, trained as a psychoanalyst, began to decompose the static model and introduced stages of development in adulthood. He proposed an increase in introversion in the latter stages of life. This was a testable hypothesis, one that later was found to covary with numerous other variables, but nevertheless a step forward in the progress toward usable theory.

Eventually, many theories may be brought together to form a model. One feature of any model that is synthesized from the research on aging to date will be the recognition of aging as a multidirectional change process rather than an arbitrarily defined quantitative parameter.

The function of a theory is related to its definition and comprises two major complementary purposes. First, a theory is a tool in the

generation of knowledge. It allows us to speculate upon and test hypotheses that arise in the course of observation and research. Second, theory becomes a goal, some ultimate level of knowledge about a subject that we strive to attain. In its infancy, the study of the psychology of aging was, and probably still is, concerned with theory as a tool. The goal stage is represented more fully when a model can be composed that is complete and consistent with existing knowledge. This paper will focus on the earliest model formulations and theoretical statements. These can be considered prototheories, early attempts to understand the experience and process of aging. They are neither complete nor fully consistent but they are the early beginnings of psychogerontology.

EARLY BEGINNINGS

Prior to 1900, American interest in aging was focused on narrow aspects of the aging process. From a burgeoning attention to studies on the growth of children, came a new concentration on the entire developmental life span. Generally, the study of children was both easier and more necessary. Children were a readily available research population, frequently assembled in schools and easily controlled by parents and teachers. The changes in children were obvious and happened so quickly in the early years of life that experimenters could follow a sequence or part of one in a relatively short span of time. The general population was less dense, children were more necessary in the work force to take the places of incapacitated and dying laborers. All these factors combined to make the study of child development both necessary and appropriate.

Life span placed a limit on the study of aging for a long time. Human beings just did not live very long past retirement until the 20th

century. When they did, their families and society often relegated them to a position more helpless than that of a child. The aged were seen as a problem, since they were often unable to function except in very nondemanding capacities and either became or were perceived as a burden on the rest of the family. Issues such as longevity, death, and social interaction with the elderly were treated primarily in an anecdotal or biographical manner. Many of the articles of this early period were pragmatic in nature, in that they attempted to answer specific and practical questions concerning problems of the aged.

In 1889 G.M. Humphrey published in the Journal of Physiology (1891) his article "Senescence and Rejuvenation", dealing with the limits of longevity. Minot also carried out detailed cytological investigations, in an attempt to relate aging to a change in the relation between the volume of the cell nucleus and the cytoplasm. In contrast to the problem-oriented approach to aging taken by most of his contemporaries, Gascom (1869), in his "Essay on Longevity", pointed out the positive connotations of long life. He relates the increase in longevity to personal, family, and national prosperity and affluence. This work was written for the Assurance Company of Boston, a life insurance company.

Much of the information on aging available in this period, including most of Minot's work, can be classified as biological or physiological. The influence of the medical profession far outweighed that of the new science of psychology. Early explanations were concerned with either the determinants of longevity or death, with development and aging regarded as deteriorative processes of change. Early papers, dealing with heart disease, senility,

and insanity brought to light many of the problems and fears associated with aging. During this period, the biologist Metchnikoff (1908), proposed the theory of intestinal putrefaction which eventually became part of the accumulative waste theory. It was suggested that aging occurs because the body cannot maintain youth in the face of increasing amounts of waste to dispose of. More and more waste remains internal and contributes to cell decline. He also developed a theory of the death instinct, which was closely interwoven with the biological waste concept.

Genetic psychology attempted to provide a model for analysis of development that could not be synthesized by the narrow views of the anecdotal and physiological approaches. James Mark Baldwin (1897), an early genetic psychologist in the tradition of Galton and Darwin, first proposed developmental sequences applicable to many facets of growth, and he hypothesized their interconnections. Baldwin also carried out a systematic observation of his two daughters, born in 1888 and 1891, during their infancies. It was Baldwin, not Piaget, who first attempted to assimilate a description of progressive stage by stage intellectual development and the corresponding biological adaptations of the life span. He proposed a comprehensive genetic epistemology embracing various modes of experience organized sequentially into stages of logical, scientific, social, moral, religious, and aesthetic conciousness. (Broughton, 1981)

The European contribution of Quetelet (1835), mathematician, statistician, and astronomer, was his probability statements about human aging. Quetelet proposed the concept of "average man", focusing on both biological and social determinants. He presented data from various age groups on sensory functioning, height, weight, hand strength, and productivity. (Riegel, 1977).

Americans gradually advanced to a widespread curiosity about the life span. This interest first became apparent in pre-scientific biographical accounts and anecdotal reports. These were similar to case histories and usually reported problems with the elderly and/or methods of dealing with them. Genetic psychology and physiological research added a measure of scientific flavor to the investigation. The scientific psychology founded by Weber, Wundt, and others in Germany had a strong influence on psychological investigations and experiments in America. The methodology, study of individual differences by an uncontaminated analysis of the mind, was brought to America by Cattell. Fechner's work in psychophysical methods enabled subsequent experimenters to investigate individual and group differences in sensory processes. Galton introduced the concept of evolution into psychology and it was supported in America by Baldwin. He was concerned with developmental psychology, but did not conduct any large scale investigation of performance. It remained for researchers of the 20th century to develop and refine a scientific prototype for the study of life-span development.

HALL AND THE TWO STAGE ERA: ADOLESCENCE AND SENESCENCE

In 1904, G. Stanley Hall published his well-know two-volume work Adolescence, and immediately afterward expressed his intention to study the other end of life - senescence. Hall published Senescence in 1922, a book that revolutionized thought and methodology in the study of aging in America. At the time of its publication, Hall was 76 years of age. As he grew older, Hall became particularly interested in aging and in Senescence he expressed his formulation of an early theory of aging.

A major portion of Senescence was devoted to the survey questionnaire that Hall and one of his graduate students, Colin Scott (1896), compiled and sent to Hall's contemporaries. Returns were received from 226 persons, who were asked to explore their own experience of old age in nine areas. Categories of inquiry included perspectives on aging both as a child and an adult. Subjects were asked to report in retrospect how they had felt about old age when they were children, and what they used to think it would feel like to be old. They were then asked to report their actual feelings at the time of the survey. Senescence contains both these introspective observations by Hall and others of the subjective experience of old age and an extensive study of the literature on old age in the various sciences at the time.

Hall's study suggested a number of suppositions to be tested, including cognitive deficiencies due to fear and reduction of anxiety in later life. Hall's methods were not conducive to testing these hypotheses, however, since he relied mainly on introspection. Nevertheless the significance of the questionnaire was twofold: 1) it initiated a protoscientific approach to studying aging in large numbers of individuals and 2) it provided a base for arguing against the conception of old age as a regression to childhood. Responses to the questionnaire clearly differentiated between childlike views of old age and the corresponding actual experience. Within the group sampled, many individuals were still productive and intellectually alert. They seemed to have lost none of the basic cognitive abilities which they acquired earlier, and may even have tempered them with wisdom. In no response did Hall find support for a regression to childhood view. Rather, old age began to appear as a very unique, yet fitting step along the continuum of

development.

Hall, a child psychologist himself, was stimulated by the question of how man's various behavior modalities might change over the course of time. His hypothesis was that changes would probably occur in psychological functioning throughout the life span. Until this time, it had been supposed that after puberty human behavior would be characterized by either a good deal of stability and constancy or deterioration.

On a larger scale, Hall's book had major impact on other scientific disciplines and with the population in general. The volume Senscence set a model for others to study aging and demonstrated the impact of aging on persons in all phases of life. This provided the impetus for other researchers, in many disciplines, to take up the study of aging. Hall himself considered old age an important part of living and communicated these feelings, in plain language, to all who read his book.

The adolescence/senescence dichotomy set forth by Hall was a step toward theory formation. Clear hypotheses were put forth, although by Hall's methods there were serious limitations to their testability. One major hypothesis was the idea of a two-stage life-span itself. Another was the suggestion that change occured throughout all of life, and as Hall suggested, not all change occuring during senescence is deteriorative. Hall's methods, chiefly introspection, were unsuited for hypothesis testing. So, it remained for other researchers to delineate the methods and specific research questions that could and would be empirically studied.

THORNDIKE: CONTRIBUTIONS FROM LEARNING

The quantitative research carried on by Thorndike was initially

directed at the problems of children and schools. But this research became a lifelong interest and was gradually translated into investigative efforts to understand adult learning. Thorndike began with the belief that humans are born with certain tendencies that can be shaped and modified by learning, across the life-span continuum.

Topics of memory, learning, and complex performances on the part of different age groups were first explored by Thorndike (1928). He was interested in the nature of differences between age-groups and individuals within groups. Thorndike (1928) showed that when speed factors were removed from test evaluation, average scores either became highly stable or showed improvement during the later years of life. He also investigated on a limited basis the attitudes, value preferences, and other personality traits of the aged (Throndike, 1935).

While Thorndike developed no specific theory of aging, his contributions to the discipline of psychogerontology covered many areas: improvement in statistical research techniques, attention to intellectual differences between age-groups and individuals, and evidence of developmental changes. These accomplishments complemented the newly emerging testing and measurement movement.

MILES AND TERMAN: THE TESTING MOVEMENT

In 1933, Walter Miles made the statement: "Maturity, later maturity and senescence are still a realm for folklore, anecdote, and personal impression." (Munnichs, 1966). Miles considered the opinion that the adult would not be influenced by aging a form of prejudice. In other words, it did not make sense to deny that change occurred in adulthood, another disputation of the long-held static view of maturity. He felt, therefore,

that research on subjects of all age groups was greatly needed. Because of this view in 1928, Miles established, at Stanford University, the first major research unit devoted to the study of the psychology of aging. It was there, with Lewis Terman and E.K. Strong, that he completed the Stanford Later Maturity Project.

The project was designed to delineate any differences in abilities existing among age groups. The areas studied covered a wide range of behavioral and cognitive functions. Simple reaction time and other psychomotor functions were among the experimental interests. There was also a vocational element in this project since Miles was concerned with the inability of a number of individuals over 40 to locate employment in the San Francisco Bay area. This part of the project was handled by E.K. Strong (1931), who later developed the Strong Vocational Interest Blank. Terman and Miles proceeded to compare other psychologically measurable variables utilizing the Otis Self Administered Test of Intelligence. Miles demonstrated again, as did Thorndike, that when speed factors were removed, other measures (specifically IQ) were either stable or improved with age. 863 subjects from two California cities participated in the Stanford Later Maturity Project. Their ages ranged from 6 to 95. Comparisons were drawn in the areas of intelligence, perceptual, and motor skills. Much attention was directed to psychomotor functions, in an attempt to distinguish simple reaction speed from motility (speed of Motor movements).

Miles had introduced a major modification to the focus on "senescence" and "the aged" represented by his predecessors. The common generalizations and group stereotypes were revised by a view of getting older as progression, beginning in the 20's and lasting until death, with a very wide

span of individual differences. The end result was a new conceptualization of aging as a process, not merely a problem in and of itself.

Miles asserted from the results of this project that the second half of life should not be considered as less changeable than the first half of life. Development was now being firmly placed on a life-span continuum in which aging was no longer seen as merely the final problem. Miles concluded, based on experimental results, that while deterioration is inevitable, some integrative functions involving experience or judgment remain intact to the end. His findings were reported to the American Psychological Association in his presidential address of 1932. (Miles, 1933)

The impact on psychology was immoasureable in the sense that it became obvious that aging had developed into a major field of study. Research activity in the area of aging increased dramatically across the United States. Not only had Miles, Terman, and Strong carried on research themselves, but they supervised at least eight doctoral dissertations related to the Stanford Later Maturity Project. More and more, psychologists and the general population were beginning to realize the value of a lifelong view of development and the aging process.

Miles' hypothesis was that aging was not a problematic event in and of itself. Rather it was part of a larger process of continuing growth and development of the organism. While Miles did not formally refer to his views as a theory, they may be considered as such in the light of present knowledge. In the space of 40 years, not only had aging become a viable area of research in psychology, it had also undergone considerable change in the definition by which it was viewed. Therefore Miles' greatest contribution to theory formulation has been the concept of aging as a

process. The research of Miles created the need for a synthesis of prior existing research, with the concept of aging as a process.

COWDRY: FOUNDING FATHER OF MODERN GERONTOLOGY

After Miles, researchers turned to more specific issues concerning the aging process rather than further development of theoretical constructs or models. Some of these subsquent studies were assisted by the development of more appropriate measuring instruments. Jones and Conrad (1933) investigated perceptual skills, using the Army Alpha test, which is differentially structured allowing for more specific inferences about intellectual variations and changes. The sample was selcted from a large adult population in New England. A year later Cattell (1934) analyzed the dependency of growth and decline on variables including original intelligence level, education and socioeconomic status.

Due to his belief that gerontology was interdisoiplinary in nature, Vincent Cowdry used his synthesizing skills to bring together a variety of this type of information and analytical findings in his 1939 volume Problems of Aging. Support for this work was provided by the Macy Foundation, whose director had become interested in aging. Cowdry himself emphasized the biological and medical aspects yet gathered interdisciplinary findings on aging and from this time forward there has been a renewed close relationship between medical/biological and psychological studies of aging (Goulet and Baltes, 1970). Cowdry also utilized his organizational skills, again with the backing of the Macy Foundation, to assemble the diverse fields involved in the study of aging and establish the International Association of Gerontology. Participants included representatives from medicine, biology, anthropoplogy, chemistry, sociology, and economics,

to mention a few. This development leads us to the next and final phase of this paper's overview of the history of the psychology of aging.

FORMATION OF ORGANIZATIONS: PATH TO THE APA

In 1940-41, the National Research Council Committee on the biological processes of aging gained momentum when five organizations helped sponsor conferences studying issues concerned with the process of aging. The organizations were: American Orthopsychiatric Association, the Medical Clinics of North America, the American Chemical Society, the United States Public Health Service, and the National Institutes of Health. Some of the issues discussed in these conferences were: aging as a public health problem, industrial aspects of aging workers, intellectual changes with age, and mental health/psychotherapy for the aged. The conferences led to acknowledgement of the importance of aging individuals as part of society requiring attention, and to this extent in 1941, the National Advisory Commission developed a unit on gerontology within the National Institute of Health.

From 1941 to 1945 World War II almost totally interrupted all psychological research and progress in the study of aging. However, in 1945, the movement returned with renewed vigor, as is exemplified by the founding of the Gerontological Society of America, Inc.

Also in 1945, Sidney Pressey of Ohio State University began the efforts necessary to establish a separate division within the American Psychological Association of Maturity and Old Age (now known as Adult Development and Aging). In the following year, Division 20 was in fact established, elected its first officers and held its first meeting. This was a distinct sign of the recognition by psychologists of the need to concern themselves with persons in the latter stages of life, rather than only those in the beginning stages. Pressey felt that a more in-depth understanding of the

aging process could significantly aid in reducing the problems encountered in later life.

CONCLUSION

In America, early researchers who were concerned with the problems of aging began by studying children. Within the developmental span, aging was dealt with at first in anecdotal accounts of a non-empirical nature. Parallel to this movement were the physiological investigations which examined the physical problems related to aging, specifically the decline of various functions, through the use of observation and introspection.

The cycle was broken by the work of G. Stanley Hall, who initiated a survey questionnaire study that assisted him in formulating a two-stage theory of life development. Life, in Hall's view, was divided into adolescence and senescence. This proved to be an impetus for other researchers to at least entertain the possibility that development continued throughout the life-span. Hall's book Senescence also enlightened the public to the impact and universality of aging for individuals in all phases of life.

Following Hall, the general trend in American psychology moved toward learning. Thorndike was a prominent figure in this movement and also found himself engaged in studying adult learning and interests. His findings elucidated both cohort and individual differences for persons of all ages. While Thorndike proposed no theory of aging, he contributed to subsequent thought and research.

During Walter Miles' time the testing movement in America had begun. Stanford was the site of Terman's Binet revision and Strong's development of the Strong Vocational Interest Blank. Within this setting, among these

colleagues, Miles developed what can be called a process view of aging. Perhaps it is stretching somewhat to refer to this view as a theory, but in that Miles first treated the entire span of development as a dynamic process, and found ways to test this belief of development as a dynamic process, his hypothesis is sufficiently global to be considered a major theory.

Cowdry then assimilated and organized the diversity of participants and products in the field of aging. This led to the formation of several organizations which identified themselves by their interest in aspects of the aging process. And in turn, the momentum established by these organizations led to the recognition by the APA of the field of gerontology as deserving a separate division.

This completes the brief history of theoretical formulation within the psychology of aging. Since 1946, aging has gradually become a national priority. The rise and fall of social program funding within various administrations has not stemmed the flow of interest in the aging process. Perhaps future generations will synthesize a metatheory to consolidate all that is known of aging. Currently we are fortunate to participate in the accumulation of knowledge in progress.

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